INSTRUCTION MANUAL

REGULATED POWER SUPPLIES

LOT—R—5152—A, LOT—V—5152—A

SPECIFICATIONS AND FEATURES

MP MASTER
MA28844

DC OUTPUT — Voltage regulated for line and load. For voltage and current ratings see table I below.

TABLE I

MODEL	VOLTAGE RANGE	MAXIMUM CURRENT (AMPS) AT AMBIENT TEMPERATURE		
		40°C	50°C	60°C
LOT-R-5152-A	5 ±5%	12.0	9.5	7.0
	±12 to ±15	3.0	2.2	1.2
LOT-V-5152-A	5 ±5%	9.0	7.3	5.2
	±12 to ±15	2.0	1.4	0.750

Current range must be chosen to suit the appropriate maximum ambient temperature. Current ratings apply for entire voltage range.

REGULATED VOLTAGE OUTPUT (each output)

Regulation (line) — 0.15% for input variations from 105-125, 125-105, 210-250, or 250-210 volts AC.

Regulation (load) — 0.15% for load variations from no load to full load or full load to no load.

Temperature Coefficient — 0.03%/°C

Remote Programming (5V output only)

External Resistor — Nominal 200 ohms/volt output. Use a low temperature coefficient resistor to assure most stable operation.

Programming Voltage — One-to-one voltage change. The programming supply must have a reverse current capability of 6 ma. min.

Remote Sensing — Provision is made for remote sensing to minimize the effect of power output lead resistance on DC regulation. Sensing leads should be a twisted pair to minimize AC pickup. A 2.5 mf, elect., capacitor may be required between output terminals and sense terminals to reduce noise pickup.

OVERSHOOT — No overshoot under conditions of power turn-on, turn-off, or power failure.

AC INPUT — 105-125 or 210-250 volts AC at 47-440 Hz. Standard LOT-R and LOT-V power supplies are factory wired for 105-125 volt input, but can be rewired for 210-250 volt input. See Figure 1 and schematic diagram for rewiring of AC input. Input power*: 370 Watts (LOT-R) 270 Watts (LOT-V). Power factor*: 0.8. Ratings apply for 57-63Hz input. For 47-53Hz input derate current 10% for each ambient temperature given in table I. For 63-440 Hz input consult factory.
*With output loaded to full current rating and input voltage 125 volts AC, 60Hz.

TRACKING (±12 to ±15V output only) — Absolute difference between negative and positive outputs within 2%; 0.2% change for all conditions of line, load, and temperature.

OVERLOAD PROTECTION — Automatic electronic current limiting circuit, limits output current to a safe value, protecting load and power supply when overloads and direct shorts occur.

INPUT AND OUTPUT CONNECTIONS — See outline drawing for location.

AC input — Terminals on transformer
Ground — Terminal on transformer
DC output — Turret terminal on printed circuit board
Sensing — Turret terminal on printed circuit board
Overvoltage Protector — Quick disconnect terminal on printed circuit board with mating connector attached.

OPERATING AMBIENT TEMPERATURE RANGE AND DUTY CYCLE — Continuous duty from 0°C to +60°C ambient with corresponding load current ratings for all modes of operation.

STORAGE TEMPERATURE — -20°C to +85°C

DC OUTPUT CONTROL — Screwdriver voltage adjust controls permit adjustment of DC output voltages. One control simultaneously adjusts the dual (±12 to ±15V) outputs. A separate control is provided for the single, 5V output. See outline drawing for location of controls.

GUARANTEE — 60 day guarantee from date of shipment ..... materials and labor.

PHYSICAL DATA

Size — LOT-R: 4-7/8" x 16-3/4" x 4-7/8"; LOT-V: 4-7/8" x 13-3/4" x 4-7/8"

Weight — LOT-R: 14-1/2 lbs. net, 16 lbs. shipping; LOT-V: 10-1/2 lbs. net, 12 lbs. shipping.

Finish — Gray, FED. STD. 595 No. 26081

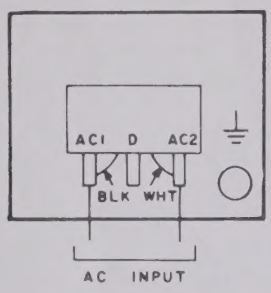
MOUNTING — Three surfaces, each with clearance mounting holes, can be utilized for mounting this unit. All LOT-R and LOT-V power supplies can be mounted with Top, Front or Rear facing up. Top, Front, or Rear must be in a horizontal plane. Air circulation is required when unit is mounted in confined areas. Refer to Outline Drawing for mounting details.

"J" OPTION — Standard LOT-R and LOT-V power supplies can be obtained for 90-110 VAC, 47-440 Hz input. For 47-53 Hz input derate current 10% for each ambient temperature given in table I. For 63-440 Hz input consult factory.

OVERVOLTAGE PROTECTOR ACCESSORY

Adjustable ..... Overvoltage Protectors LMOV-1 and LMOV-3 are available. Additional wire must be added to the Overvoltage Protector leads in order to reach the power supply output terminals.

Fixed ..... Overvoltage Protector L-20-OV-5 is available for use with the single (5V) output.



* AC INPUT CONNECTION SHOWN IS FOR 105-125VAC
FOR 210-250V INPUT, DISCONNECT BLK & WHT TRANFORMER LEADS FROM TERMS ACI & AC2 AND RECONNECT BOTH LEADS TO TERM D

Figure 1. AC Input Connection.

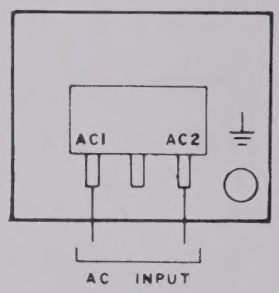
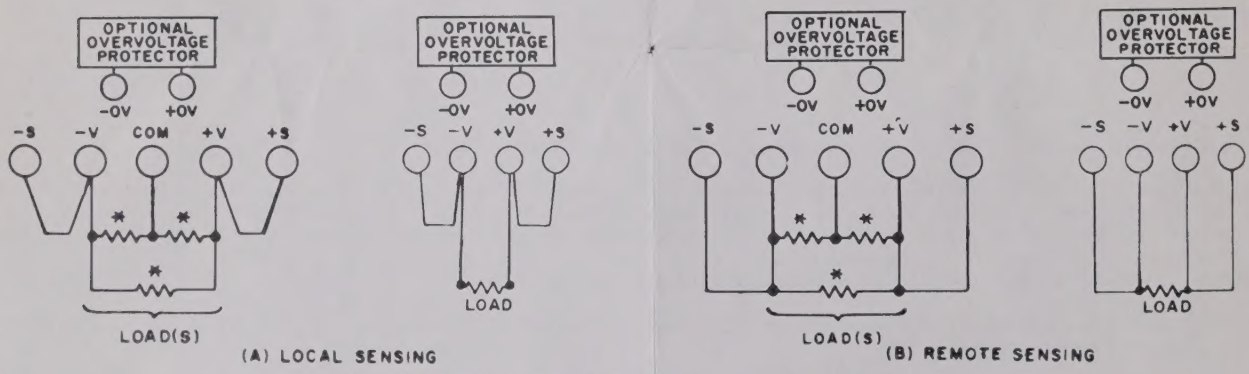


Figure 2. AC Input Connection, "J" Option.



* LOAD(S) CAN BE CONNECTED IN ANY CONFIGURATION

Figure 3. DC Output Connection.

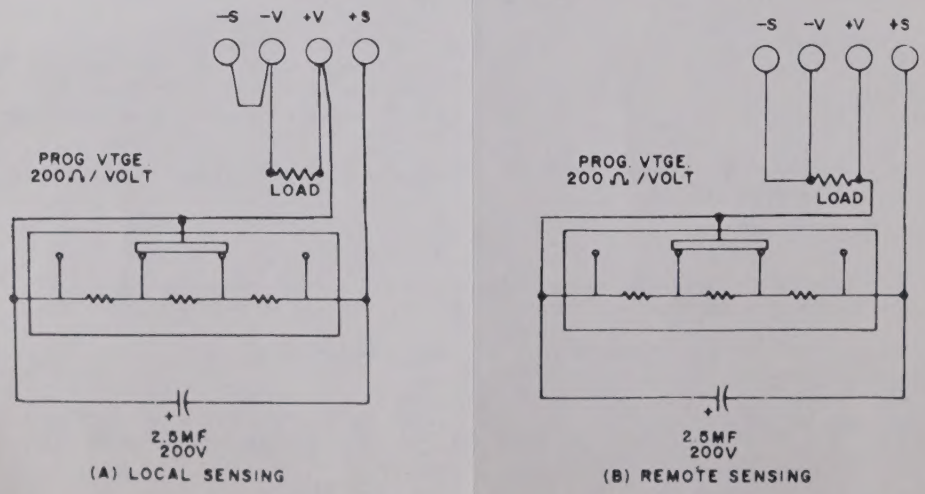


Figure 4. Programmed Voltage, With External Resistor (5V Output Only).

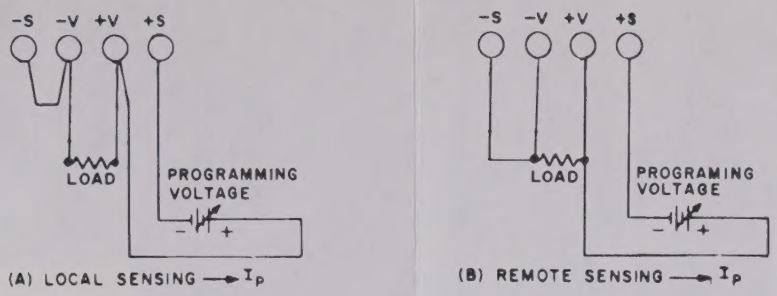
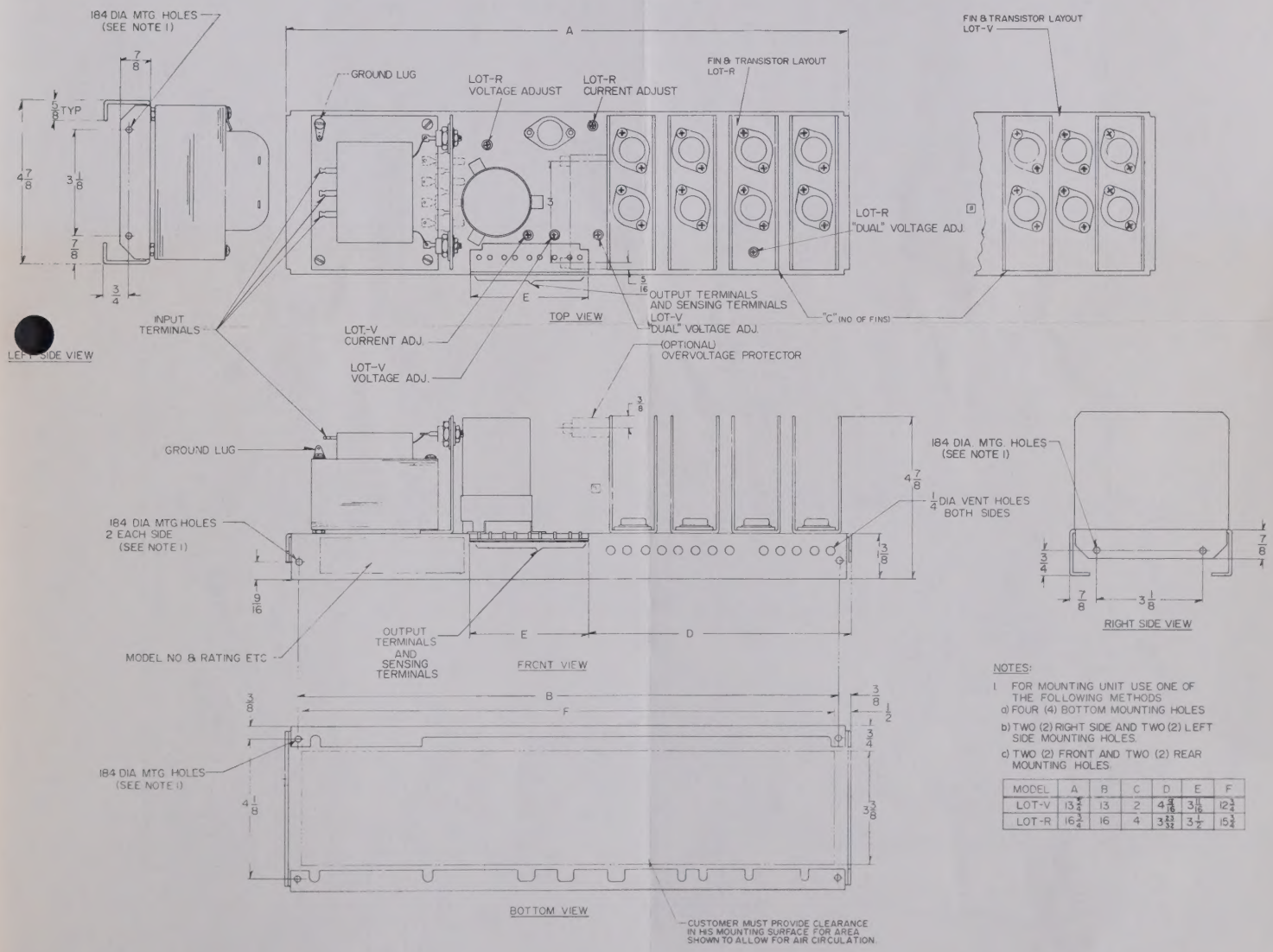


Figure 5. Programmed Voltage, With External Programming Voltage Source (5V Output Only).

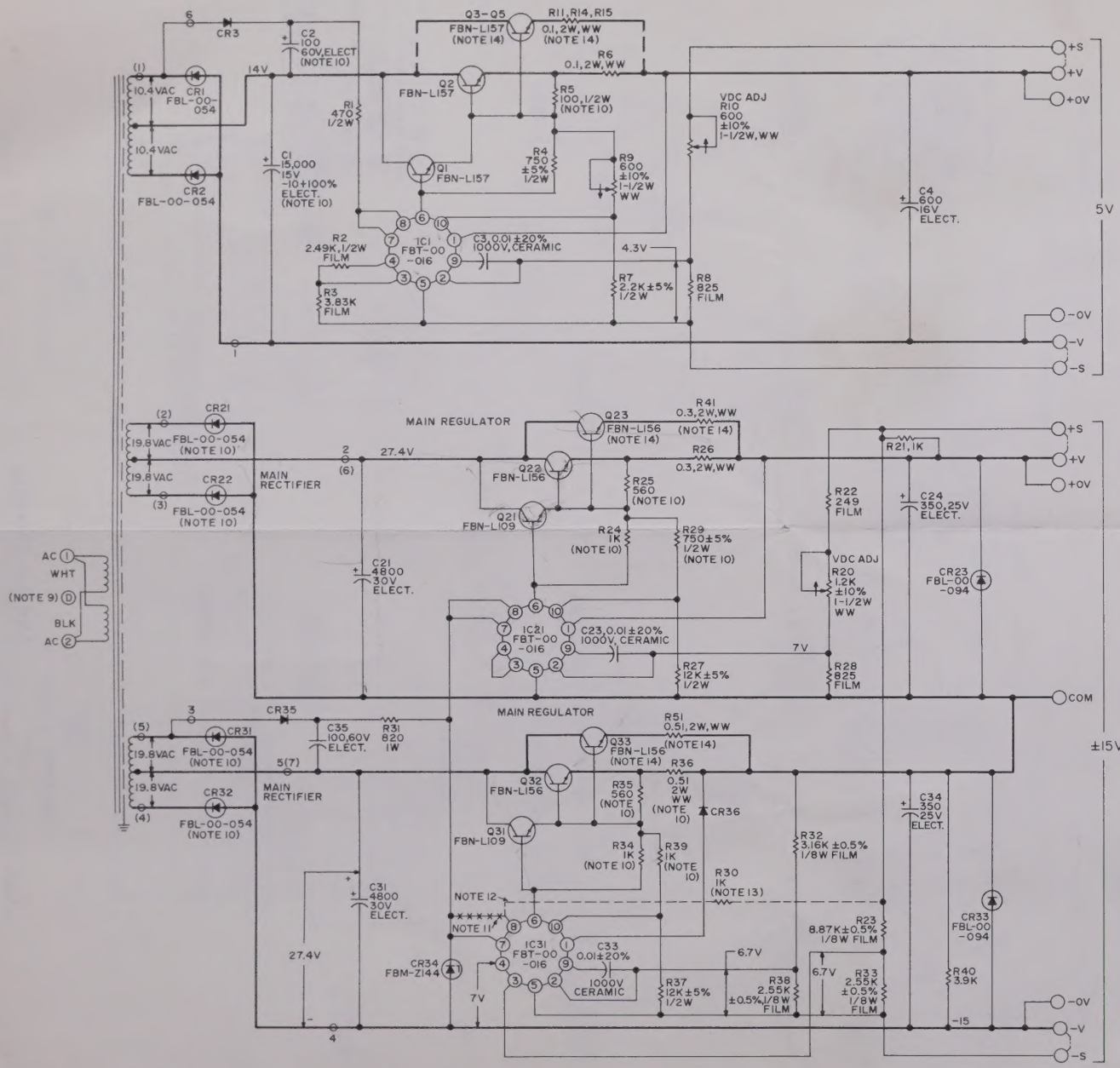

184 DIA. MTG. HOLES (SEE NOTE 1)
A
FIN & TRANSISTOR LAYOUT LOT-V
GROUND LUG
LOT-R VOLTAGE ADJUST
LOT-R CURRENT ADJUST
FIN & TRANSISTOR LAYOUT LOT-R
LOT-R "DUAL" VOLTAGE ADJ.
INPUT TERMINALS
LOT-V CURRENT ADJ.
LOT-V VOLTAGE ADJ.
OUTPUT TERMINALS AND SENSING TERMINALS
LOT-V "DUAL" VOLTAGE ADJ.
"C" (NO OF FINS)
TOP VIEW
LEFT SIDE VIEW
(OPTIONAL) OVERVOLTAGE PROTECTOR
GROUND LUG
184 DIA. MTG. HOLES (SEE NOTE 1)
1/4 DIA VENT HOLES BOTH SIDES
184 DIA MTG HOLES 2 EACH SIDE (SEE NOTE 1)
MODEL NO & RATING ETC
OUTPUT TERMINALS AND SENSING TERMINALS
FRONT VIEW
RIGHT SIDE VIEW
184 DIA. MTG. HOLES (SEE NOTE 1)
BOTTOM VIEW
CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR AREA SHOWN TO ALLOW FOR AIR CIRCULATION.

NOTES:

1. FOR MOUNTING UNIT USE ONE OF THE FOLLOWING METHODS
   a) FOUR (4) BOTTOM MOUNTING HOLES
   b) TWO (2) RIGHT SIDE AND TWO (2) LEFT SIDE MOUNTING HOLES.
   c) TWO (2) FRONT AND TWO (2) REAR MOUNTING HOLES.

MODEL	A	B	C	D	E	F
LOT-V	13 3/4	13	2	4 3/16	3 11/16	12 3/4
LOT-R	16 3/4	16	4	3 33/32	3 1/2	15 3/4

Outline Drawing



NOTES:

1. RESISTORS ARE COMP. 1/4W WITH VALUES IN OHMS, UNLESS OTHERWISE NOTED.
2. RESISTOR TOLERANCES: COMP. ±10%, FILM ±1%, WIREWOUND ±5%, UNLESS OTHERWISE NOTED.
3. CAPACITOR VALUES ARE IN MICROFARADS.
4. CAPACITOR TOLERANCES: ELECTROLYTIC −10+75%.
5. DESIGNATIONS ARE LAMBDA PART NUMBERS.
6. SYMBOLS:
   - ↑ INDICATES CLOCKWISE ROTATION OF SHAFT.
   - ⏚ INDICATES CONNECTION TO CHASSIS.
   - ▶| LAMBDA PART NO. FBL-00-030. USE IN4002 DIODE FOR REPLACEMENT UNLESS OTHERWISE NOTED.
   - ⊖ INDICATES TERMINAL ON PRINTED CIRCUIT BOARD. TERMINAL NOS. IN PARENTHESIS APPLY ONLY TO LOT-V-5152-A. TERM NOS. NOT IN PARENTHESIS APPLY ONLY TO LOT-R-5152-A.
   - ▭ INDICATES ACTUAL UNIT MARKING.
7. CONDITIONS FOR CIRCUIT POINT MEASUREMENTS: INPUT: 115 VAC, 60 Hz RATED VOLTAGE NO LOAD. INDICATED VOLTAGES ARE TYPICAL VALUES AND ARE D.C., UNLESS OTHERWISE NOTED, D.C. MEASUREMENTS TAKEN WITH 20,000 OHMS/V VOLTMETER BETWEEN COM. AND INDICATED POINTS FOR ±15V OUTPUT; BETWEEN −V AND INDICATED POINTS FOR 5V OUTPUT UNLESS OTHERWISE NOTED.
8. DERATE CURRENT 10% FOR 47-53 Hz INPUT, FOR 63-440 Hz CONSULT FACTORY.
9. T1 PRIMARY CONNECTION SHOWN IS FOR 105-125 VAC INPUT FOR 210-250 VAC INPUT: DISCONNECT WHT & BLK TRANSFORMER LEADS FROM TERMINALS AC1 & AC2 RECONNECT BOTH LEADS TO TERM D.
10. ON MODEL LOT-V-5152-A: C2 IS 47MF, 60V; C1 IS 16,000 MF; R24 & R34 ARE 3.3K; R25 & R35 ARE 1K; R29 IS 1K; R5 IS 120; R39 IS 680, 1/2 W; R36 IS 0.30; CR21, CR22, CR31 & CR32 ARE FBL-00-094.
11. ONLY USED ON LOT-R-5152-A.
12. ONLY USED ON LOT-V-5152-A.
13. R30 ONLY USED ON LOT-V-5152-A.
14. R15, R41, R51, Q23, Q33, AND Q5 ONLY USED ON LOT-R-5152-A.

FOR WIRING OF POWER SUPPLY TO LOAD REFER TO SUPPLY-TO-LOAD WIRING DIAGRAMS.

DOTTED CONNECTIONS SHOWN ON OUTPUT TERMS INDICATE JUMPERS IN PLACE FOR LOCAL SENSING CONNECTION.

MP MASTER
MA28844

SCHEMATIC DIAGRAM
REGULATED POWER SUPPLY

MODELS
LOT-R-5152-A
LOT-V-5152-A

LAMBDA
ELECTRONICS CORP.
MELVILLE, NEW YORK
A Veeco SUBSIDIARY